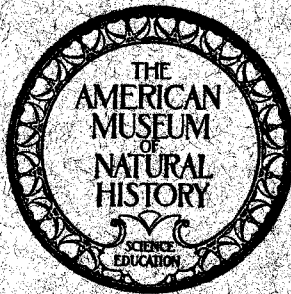# ANTHROPOLOGICAL PAPERS

OF

THE AMERICAN MUSEUM OF NATURAL HISTORY

VOLUME XXXVI, PART I

CHANGES IN POPULATION PROFILES AMONG THE NORTHERN PLAINS INDIANS

By Clark Wissler

THE AMERICAN MUSEUM OF NATURAL HISTORY
PUBLICATIONS IN ANTHROPOLOGY

In 1906 the present series of Anthropological Papers was authorized by the Trustees of the Museum to record the results of research conducted by the Department of Anthropology. The series comprises octavo volumes of about 350 pages each, issued in parts at irregular intervals. Previous to 1906 articles devoted to anthropological subjects appeared as occasional papers in the Bulletin and also in the Memoir series of the Museum. Of the Anthropological Papers 35 volumes have been completed. A complete list of these publications with prices will be furnished when requested. All communications should be addressed to the Librarian of the Museum.

The current volume is:—

VOLUME XXXVI

I. Changes in Population Profiles among the Northern Plains Indians. By Clark Wissler. Pp. 1-67. 1936. Price, $.75.

II. (In preparation.)

ANTHROPOLOGICAL PAPERS

OF

THE AMERICAN MUSEUM OF NATURAL HISTORY

VOLUME XXXVI, PART I

CHANGES IN POPULATION PROFILES AMONG THE NORTHERN PLAINS INDIANS

BY CLARK WISSLER

.

CHANGES IN POPULATION PROFILES AMONG THE NORTHERN PLAINS INDIANS

BY CLARK WISSLER

1

.

CONTENTS

3

TABLES

INTRODUCTION

In a former paper we discussed gross population trends among the Indian tribes of the Northern Plains, giving particular attention to the Blackfoot, Piegan, Blood, Gros Ventre, Sarsi, Assiniboin, and Plains Cree.[1] In the course of that investigation we accumulated data on age and sex distinctions, which contributed to an understanding of the observed trends. It follows that the data used in this second paper are from the same sources and subject to the limitations inherent in the situation. However, we consider these data as about all that can be expected from the past and so they must serve as the basis for this study in primitive populations. Our assumption is that trends consistently indicated over periods of from ten to fifty years have high degrees of certainty even in small populations.

As in the earlier study of these populations the tabulations are to be credited to Mrs. R. D. Sanderson, Honorary Life Member, American Museum of Natural History.

---

[1] Wissler, 1936a.

THE FUR TRADE PERIOD

The earliest comprehensive tabulation of population for the area under consideration was made by Henry[1] in 1805 (Table 1). From the text of Henry's journal it seems that Fort des Prairies was a general name for the entire Northern Plains and so covers, among others, the Blackfoot, Piegan, Blood, Gros Ventre (Atsina), Sarsi, Assiniboin, and Plains Cree tribes. The other localities as listed, except the first, are near or east of Lake Winnipeg and the Red River and were occupied by Ojibway and Cree.

The numbers for Fort des Prairies are so much greater that they dominate in the total. If we ignore Fort des Prairies, the totals for the remainder stand as 2679 men, 3363 women, and 6965 children, about two men to three women, and a ratio of about 530 children to a population of 1000. However, for Fort des Prairies the ratio is about 714 children per 1000 population. Further inspection of Henry's table shows 655 for English River and 612 for Fond du Lac. Some of these ratios are so high that they may be questioned. On the other hand, Henry had unusual opportunities to gather data, having, as part owner in the fur business, access to all the reports sent in by the heads of trading posts. Readers familiar with his journal are aware of his conscientious accuracy in reporting upon all matters. To verify the printed table we consulted the manuscript copy in the archives at Ottawa. As a result of these investigations we are disposed to give due weight to the population figures as given. Later we shall see that at least one reservation reported a population in which the number of children was almost three times the number of women. In another part of his journal, a few years later, Henry gives the number of men for Fort des Prairies as 4690, which corresponds closely to the number given in Table 1 and is a further check upon the data contained therein.

David Thompson,[2] an associate of Henry, gives some data on the Piegan as, three men to five women, stating that male births exceed female births. A later source to be cited is a report to the Secretary of War,[3] 1820, covering tribes in the United States, as follows:—

The average proportion of Warriors (men) to the whole number of souls, is about 1 to 5. In some tribes it is more, in others less. In the tribes dwelling among white people, the proportion is about 1 to 3. The number of men and women in the Cherokee nation is nearly equal. In the Menominee and Winnebago tribes, the women are a third more than the men. The number of children is much greater in

---

[1] Henry and Thompson, 1897, vol. 1, 282.
[2] Thompson, David, 1916, 352.
[3] Morss, 1922, 375.

7

proportion to the whole number of souls, in the two tribes last named, than in tribes mingled with white people.

Estimate of the proportion between men and women, (from respectable authority).

	Men	Women
Cherokees	Equal	
Winnebagoes	900	1300
Menominees	600	900

In the Report of the Commissioner of Indian Affairs for 1858, Vaughan,[1] an agent of long experience, presented interesting data for the Blackfoot group (Table 2). In this table women exceed men, but in no case does the number of children approximate twice the number of women.

In 1875 General Lawrence gives data for Indians and Europeans expressed in units of a thousand persons (Table 3), using these figures to prove that under favorable conditions these Indians could double their population every twenty years.[2]

One difficulty in evaluating these early data is that we have no way of knowing how children were distinguished from adults. The initial practice of government officials was to count young unmarried Indians as children, which would list too many females and too few males as adults. However, it seems safe to conclude that in fur-trade days, there were relatively more minors among Indians than among whites and that Henry was convinced that in 1805 the Plains tribes had not only an excess of women but of minors as well. The data to follow support these assumptions.

---

[1] Vaughan, 1858, 80.
[2] Lawrence, 1875, 200.

THE RESERVATION PERIOD

In Canada, the reservation period for the Plains area opens about 1880, in the United States about 1865. The population data for this period were compiled to show sex ratios, age groupings, variations in birth and death rates, etc. As in the previous paper, the tabulations were for each successive year and according to reservation units. However, summary tables only are presented here.

Data were compiled for the following ethnographical units:—

	Agencies	Bands
Western Cree	11	52
Assiniboin	8	18
Blood	1	
Blackfoot	1	
Piegan	2	
Sarsi	1	

Two control groups were used: one, a community of Indians at Pine Ridge, South Dakota; the other, the Cree under the Carlton Agency, Saskatchewan. The various tribes of British Columbia were tabulated under nine agency groups, though the original data were given as of 241 bands and village units. Unless otherwise stated, the data are from the published government reports on Indians in Canada and the United States.

The gross populations for the tribal groups were given in the earlier paper, but, for convenience, are summarized here (Table 4). Incidentally, it should be noted that the annual tables show that the lowest counts for the Blackfoot, Canadian Piegan, and Sarsi fall between 1904 and 1929, so all these tribes are now gaining in population.

POPULATION TRENDS IN BRITISH COLUMBIA

In our first published report upon these populations we were concerned with the Plains area. However, it appeared that certain population changes in this area stood somewhat in contrast with the data for Canada and the United States as a whole, suggesting that there was something exceptional in the trends observable in the Plains populations. Accordingly, we turned to the data for British Columbia as a possible check upon thi assumption. The data as listed by the Canadian Indian reports enumerate approximately 241 separate bands under nine agencies. Inspection revealed that bands were frequently transferred from one agency to another, so we adopted the procedure of list-

9

ing the separate bands under the agency or administrative groups as of 1896. In this way a continuity of bands was secured regardless of their subsequent agency affiliation. This is awkward, because in later years the total populations, as in our table, do not correspond to the group totals in the published reports, but since our objective is to compare population trends in British Columbia with trends for the provinces east of the mountains, the procedure is defensible.

In Table 5, we present total populations for nine agencies as listed in 1896. In later reports of the Canadian Indian Department some additional bands are listed, but since none of these appear before 1909 they have been omitted from the Table.

The official list of agencies[1] as of 1896 is as follows:—

West Coast
Fraser River
Babine and Upper Skeena River
Williams Lake
Northwest Coast
Kootenay
Cowichan
Kamloops and Okanagan
Kwawkewlth (Kwakiutl)

The re-grouping of bands under agencies[1] after 1896 is roughly as follows:—

Williams Lake—in part transferred to Lytton.

Kamloops and Okanagan—some bands to Lytton, others to Okanagan and Nicola.

Fraser River—some to New Westminster, others to Vancouver and Lytton.

Northwest Coast—some to Nass, Bella Coola, and Queen Charlotte.

Babine and Skeena—some to Stuart Lake.

From Table 5 it appears that the total population figures suggest a slight decline to 1924, after which the trend is upward. As in our previous study, the initial population figures tend to fall sharply at the outset and so it seems safer to disregard the readings for 1896. So, beginning with 1899, the tendency is for the separate agency groups to decline to 1924; the possible exceptions are the Kootenay, Northwest Coast,

---

[1] For an official list of Canadian reserves and the tribal affiliations of the several bands, see [Hodge] *Handbook of Indians of Canada*, 1913, 515–549.

and Williams Lake, which groups show no consistent changes. The Babine, on the other hand, seem to have gained since 1899; so the Kwawkewlth, West Coast, Cowichan, and Fraser River lost during the period 1899–1924; the Babine and Kamloops gained; Kootenay, Northwest Coast, and Williams Lake about held their own. In short, only two out of nine gained in population during 1899–1924.

After 1924, a slight loss appears for West Coast and the Kootenay, whereas the others gain. Thus the tribes of British Columbia present a curve of population change similar in form to that for the Plains, but chronologically different. Thus, the United States Plains Indians reached their lowest level about 1895; among the Canadian tribes studied in this paper, the upward turns were: Cree, 1899, Assiniboin, 1909, Blackfoot, 1924. Apparently the tribes of British Columbia were as slow to adjust themselves to reservation life as the Blackfoot.

SEX RATIOS

Alexander Henry[1] and other early observers called attention to the relatively large number of women among the Northern Plains tribes. So it will be important to note what changes, if any, followed reservation life. The answer to this question can be approached by listing the population data under the heads of male and female.

DAKOTA CONTROL GROUP

Doctor Scudder Mekeel kindly placed at our disposal a birth, death, and marriage register for a Dakota Indian community at Pine Ridge Reservation covering the years 1908–1929, inclusively.[2] For the most part, this is a register for a group of family lines, largely in-breeding; the few individuals marrying out are balanced by those marrying in. The record was kept by educated members of the group and has every appearance of accuracy. The population in 1908 was 720, in 1929, 936. The increase has been steady throughout the interval.

Tabulating the population of this Indian community by sex, we observe that during the interval covered by the record, males tend to exceed females. (Tables 6 and 31.)

CARLTON AGENCY

We have taken the data for the Cree bands at Carlton, Saskatchewan, as a second control group, because Doctor David G. Mandelbaum

---

[1] Henry and Thompson, 1897.
[2] Copy on file in the Museum.

kindly reviewed the original records at this agency, being permitted to make a transcript of them. Since these data were thus subject to check and were supplemented by information gathered at the agency, we hoped they would serve as a control group. Table 7 presents the sex totals for all bands, showing that females have maintained a constant lead throughout and in comparison with Table 10 exceed the Western Cree female totals. Finally, the data compiled by Doctor Mandelbaum from the Agency rolls at Carlton were in close agreement with the tables for Carlton published in the Canadian Departmental Reports. Hence, we regard the published data as reliable.

When compiling the separate band tables for this agency we noted that two bands stood somewhat apart from the others, the William Charles and J. Roberts bands. For brevity, we shall speak of these two as the William Charles bands and the remaining divisions as the Six Bands (Table 7). This tabulation suggests that an outstanding example of female excess is to be found in the William Charles bands.

For comparison we present the sex ratios for ten western Cree agencies as in Table 9. (Note: the Carlton total is given in Table 7.) We observe that for Crooked Lake, Carlton, Saddle Lake, Qu'Appelle, and Edmonton, the females lead. While the ratios at the other agencies fluctuate, only one, Hobbema, suggests a slight excess of males. The William Charles bands at Carlton (Table 7) are not quite in the lead for female excess, the rank being: Edmonton, William Charles, Qu'-Appelle (Table 9).

MIGRATION AT CARLTON

At the outset we considered migration between agencies and bands as a possible disturbing factor. However, the records give these transfers, a check of which showed them to be insignificant. On the other hand, we recognized in the observed excess of women a possible stimulus to migration. Accordingly a transcript of the Carlton marriage rolls was made by Doctor Mandelbaum and tabulated as in Table 8.

The total number of women from without was 102 and the number leaving the Carlton Agency was 107. These approximately balance and should be divided by thirty-six to secure the annual average. So the effect upon population numbers is negligible.

The Cree custom is for women to marry out of their band into the band of the husband. This means, also, that the transfer or migration of males from one agency to another, will be infrequent. For the period 1896–1932, 193 women married within their own bands, an average of

about 5.3 women annually. The total number of marriages recorded was 602. The actual number of women at Carlton, twenty-one years and over, ranged from 237 in 1903 to 380 in 1934.

TRIBAL GROUPS

We now turn to the main body of data as in Table 10, which summarizes the annual tabulations. It is observable that males tend to increase relatively between 1894 and 1934. When these tribes were first settled on reservations, females were in excess of males, but after 1929 we note that males tend to equal or exceed females, except among the Cree. Further, it may be remarked that the data for the Cree include those from the Carlton Agency which we have considered separately as a control group.

BRITISH COLUMBIA

The total sex ratios in Table 11 were compiled under slightly different grouping than for the total populations (Table 5). However, we note certain group differences, as males clearly exceed for the following in the rank indicated :—

1. Kwawkewlth
2. Stickine
3. Northwest Coast
4. Lytton

Females exceed for the Cowichan throughout. The West Coast Agency reveals female excess from 1895 to 1924 and again in 1934.

In the case of Babine, Fraser, Kamloops, and Williams Lake, there are no consistent differences. After 1919 the Kootenay show an increasing excess of females.

In sex ratios for the British Columbia total population, the tendency throughout is for males to lead and the relative number of females to decline slightly.

TOTAL INDIAN SEX RATIOS

Table 12 suggests that when the total Indian population for Canada is considered, there appears no certain change in sex ratio since 1899. The total Indian population for the United States indicates a slight increase in males for the same period. On the other hand, the totals for the Provinces of Alberta and Saskatchewan, including the Canadian tribes listed in Table 10, show that females exceed males for the whole period of 1899–1929, but this is chiefly due to the inclusion of the Cree. (See Table 10.)

The United States white population for the same period, 1899–1929 (Table 12), presents a consistent excess of males, but with a downward trend.

GENERAL COMPARISONS

Table 13 introduces some comparative data. Thus in the United States, while the tendency is for males to exceed, we note that in certain European countries females lead. These differences are often explained as due to selective migration; namely, that more males go from Europe to the United States. China reports an excess of males, which is sometimes attributed to female infanticide.

ADULT SEX RATIOS

If an excess of females is sustained in a population over a period of years, some explanation is called for, since if the usual birth ratios are maintained, it is difficult to avoid assuming that some social selective factor is operating.

For example, the history of the Northern Plains tribes indicates that in pre-reservation days many girls were captured from the surrounding tribes and brought up as future wives. On the other hand, male captives, of whatever age, were usually killed. Further, the mode of life followed by these tribes presented occupational hazards among males, as in hunting and war. Again, the information we have, indicates that murders were common among men, but rare among women. All this suggests that a complex of customs in pre-reservation days could have so operated as to reduce males and increase females.

However, when these tribes were placed upon reservations, the taking of female captives ceased, murders were checked, and the hazards of hunting reduced to a minimum. Hence, we should expect to find males increasing on reservations, at least until their numbers were approximately equal to those for females. In general, this assumption is confirmed by the tabulations presented in this paper, but further analysis is advisable.

Naturally, if the disparity in numbers between males and females is due to social selection, greater differences should appear among adults. Fortunately for us, the early data list men, women, and children, thus enabling us to compare the relative numbers for each sex with modern reservation data. Accordingly, we have compiled Table 14, which gives the sex ratios for adults and minors, respectively, our present concern being with adults. However, comparisons between fur-trade data and early reservation lists cannot be strictly exact because the dis-

tinctions between adults and minors may vary. Usually all married persons, regardless of age, were considered adults. However, the reservation rolls after 1903 record the population in age groups so that after that date we have classed as minors all under twenty-one years of age. Yet, the data for the two periods show similar sex ratios.

As previously intimated, the tables suggest that at the opening of the reservation period there was a large excess of adult women among the Northern Plains tribes. Table 14 indicates that this excess declined steadily. Thus, among the Blackfoot and the Blood, the adult women are now in the minority, and though still in excess among the Cree and Assiniboin, their lead has been greatly reduced.

In 1877 Jackson[1] reported the Hopi Indians as composed of 492 men, 440 women, and 672 children. If accurate, this is in contrast to the data we have considered, but these are Pueblo Indians. (p. 20.)

THE DAKOTA AND CARLTON GROUPS

While the foregoing presents the general status of adult sex ratios, it remains to give consideration to the control groups. Table 18 reveals that among the Dakota the tendency since 1909 has been for men to equal, if not exceed, women. Carlton Agency, however, presents a marked excess of adult women (Table 15).

In the previous section we reported the Carlton data under two heads and so to be consistent present Table 19. Relatively there are more adults in the Six Bands, but the number of men in the William Charles bands is less.

In 1911 the Agent[2] comments upon the William Charles bands as follows:—

These Indians through their simple outdoor life are the healthiest of the agency. They are almost independent of government assistance, receiving besides the treaty ammunition and twine, one lot of food and other supplies for the whole year for the very destitute. Their almost entire support comes from hunting and fishing with such employment as they can secure from the trading companies.

The hazardous nature of the occupations by which they subsist is demonstrated by the number of widows who appear on the annuity pay-sheets—a very much larger proportion than are found in any other band. They are moral, and law-abiding; but many of them are very fond of liquor when they can get it.

BRITISH COLUMBIA

For British Columbia we have the total ratios for adult males and females. (Table 16.) From 1895 to 1899 adult females lead slightly,

---

[1] In Barber, 1877, 730.
[2] *Annual Report of the Department of Indian Affairs* [Canada] *for the Year ended March 31, 1911*, Ottawa, 1911, 134.

but from 1904 males tend to lead, accelerating from year to year, especially after 1919.

SUMMARY

The tendency to excess in females is magnified when adults alone are considered. Even in British Columbia adult women led in early reservation days. In the next section we will consider the ratio of minors to adults, but the suggestion here is that in pre-reservation days all of the tribes we have studied were marked by an excess of adult women. Changes due to reservation life seem the most reasonable explanation of the present tendency toward male excess.

Doubt may arise as to the significance of the observed trends in adults and minors. Differences in age grouping could account for a decline in the relative numbers of adult females. Yet, as we shall see later, the ratio varied with the tribal mode of life. Further, the totals for males and females need be subject to no such error; they also show the same trends in sex ratios, though in smaller differences.

AGE GROUPING

It is impossible to pursue this subject further without considering age differences. Anyway, students of national populations are interested in noting the simultaneous changes in social patterns and age ratios. Upon this point our data have something to offer, though the classification used may seem a bit weird. However, we must take the data as we find them.

MINORS AND ADULTS

At the outset, we noted Henry's table for the fur-trade period according to which minors were more than twice the number of women, and for the Plains tribes in particular, three times the number of women. In our Table 14, it appears that among the Cree the tendency in late years is for the minors to approximate roughly twice the number of women. The other tribes vary somewhat in this respect, the tendency being toward a lower ratio, but in general, the ratio of two to one holds for all. In 1880, white minors in the United States were twice the number of white women; in 1920 and in 1930, 1.7 times.

When we compare the data for the respective tribal groups, ranging from 1899–1934, we note that in general minors tend to increase with the years, with the possible exception of the Blackfoot. (Table 17.) It naturally follows that adults decrease relatively. Comparing adults and

minors, we note that at the outset adults exceed minors; about 1909 their relations are reversed for the Cree, in 1924 for the Blood, whereas for the Assiniboin and Blackfoot, adults still lead in 1929. The Blackfoot seem to be the exceptional case, in that their ratios are constant; in our first paper, we noted that this group lost population steadily from 1894–1929.

Table 24 shows that for Alberta and Saskatchewan as a whole, adults were in the majority in 1900, but that after 1914 these relations are reversed.

The data for the Dakota group (Table 18), when tabulated according to minors and adults, indicate that in 1908, when the record opens, there were far more adults than minors, but that the trend is for minors to increase relatively, approximately equaling adults after 1924.

For Carlton we note that among the Six Bands minors exceed after 1909 (Table 19). The William Charles bands show a still greater excess of minors.

In Henry's data we find more than three times as many children as women, and we note here that (Table 19) for William Charles bands the ratio approximates three in 1904 and holds for succeeding years at about 2.1+. So Henry may have been right, after all, in reporting a ratio of 3+ for the Plains tribes.

For British Columbia minors and adults were considered for all agencies in one table (Table 16). Disregarding sex, we note that adults lead throughout, but that after 1904 minors gain steadily, equality being predictable for 1939. An examination of the ratios for the separate agencies shows that minors are consistently fewer than adults from 1895–1934 in the case of Babine, Kamloops, Williams Lake, and Kootenay. At the outset minors are inferior at all agencies, whereas in 1929–1934 they lead in agencies West Coast, Kwawkewlth, Cowichan, and Fraser River. Thus, all show the trend from an initial low ratio for minors toward excess over adults in the near future.

The tabulations for the United States Indians as a whole, 1910–1920–1930 (Table 20) suggest that the trend has been from an excess of minors toward equality with adults. This means that the general tendency in the United States has been downward, whereas our data for British Columbia, Alberta, and Saskatchewan show that minors are on the increase; however, minors still exceed adults among United States Indians. The Canadian Indian totals of 1929 show adults and minors approximately equal in number, a status which the tribes of British Columbia and some others are obviously approaching. There is

thus an apparent similarity between the trends in ratios of minors and adults as between the totals for Canada and the United States. In both, the trend is toward an equality of adults and minors. On the other hand, if we note the white population for the United States, adults are more numerous than minors, after 1880, and gain steadily with the years. Thus, we have one distinctive difference between the Indian and white populations.

SEX RATIOS FOR MINORS

The question naturally arises as to whether the observed excess of adult females results from an excess of female minors. The discovery that the excess of females in the total population is less than when adults only are considered, suggests that the ratios among minors will be less. A review of the tables presented shows an approximate equality of male and female minors among the Cree, Assiniboin, and Blood. For the tribes of British Columbia and the Blackfoot, female minors are slightly in the minority. Among United States Indians, as a whole, male and female minors are about equal.

In the Dakota control group, female minors are less than males. In the William Charles bands girls exceed boys; in the Six Bands boys and girls are about equal. This suggests that among the Six Bands, the excess of adult women is due to losses among adult and near adult males, by death or migration. In the William Charles bands, where the excess of women is conspicuous and girls exceed boys, some male losses must occur earlier.

In conclusion, we suspect that the excess of adult females observable among certain tribes is due to social conditions, since the prevailing tendency is toward equal sex ratios among minors.

These relations, taken as a whole, oppose the assumption that inaccuracy in age grouping accounts for the observed trends. Ultimately we shall note that the death rates have fallen steadily after 1890, especially among minors. As previously noted, errors in age grouping can magnify the trend, but cannot account for gains due to falling death rates. Further, the tendency toward equality of the sexes among minors is not consistent with errors in age grouping.

AGE PROFILES

Our excuse for using gross distinctions of adults and minors is to facilitate comparisons with data from the fur-trade and early reservation periods, but since later reservation data classify Indians according

to age, we can give consideration to age profiles. Our points of interest are the individuality of the several Indian tribes, the question of trends in the annual tables, sex differences, etc. Here again our grouping must conform to the usage of the two administrative departments. Canadian Indians are listed under age classes as 0–5, 6–15, 16–20, 21–65, 66+; but in 1934 as 0–6, 7–16, 17–21, 22–65, 66+. The United States reports are less consistent, but in the main, some direct comparisons can be made. We have tabulated these age data annually for the Blood, Blackfoot, and Cree of Canada; also for the Dakota control group, and the tribes of British Columbia. As before, only summary values are given in the tables.

THE CREE

The annual data for the Cree were tabulated by Agencies (eleven in all), but we present the totals at intervals (Table 21). In general, there appears to be a slight decrease for the group, 0–5 years, 1900–1929; a marked decrease for the group 21–65 years. The compensating increase falls in the 6–15 year group. When the tabulations for the separate agencies were compared, they followed closely the patterns of Table 21.

Males and females are approximately equal in number for 16–20 years; excess of females occurs in 21–65 years; whereas for 6–15 they tend to be less than males; finally, in the 66+ age group the females tend to a slight excess.

BLOOD AND BLACKFOOT

The eleven Cree agencies form the largest homogeneous group, but we tabulated separately two tribes in Alberta, Blood and Blackfoot. We note that for both males and females the number of children aged 0–5 tends to increase. This probably means that more young children now survive. The result for ages 6–15 is not so consistent, showing a decided increase for the Blood, but little change in the case of the Blackfoot (Tables 22 and 23). Ages 16–20 show a decline in both tribes. Ages 21–65 show a tendency for females to decline, but males hold their own. These observations are based on a smaller number of cases than with the Cree, but since the data were tabulated annually, such consistent drifts as may appear should have considerable certainty.

ALBERTA, SASKATCHEWAN, AND BRITISH COLUMBIA

The Canadian totals for Alberta and Saskatchewan contain all the Indians we have studied and in addition a number of small forest tribes

(Table 24). Thus, though not strictly comparable, we give Table 24 as a check. We first tabulated these provinces separately, but as no real differences appeared, we give the combined table. The chief changes seem to be a decrease of women for the 21–65 year group and an increase for both sexes for 0–15 years.

The British Columbia data are presented in Table 25. Both sexes decline steadily for 21–65 years; the compensating gains are seen for ages 0–15. The last period, 1929–1934, suggests a marked gain for 6–15, but a loss for the 16–20 group.

UNITED STATES INDIANS

The data available for United States Indians cannot be handled in the same way, so we must be content with certain gross statistics as found in the United States Census (Table 26). Some trends are suggested for the United States Indian totals, as decrease in age group 0–5 and increases for 21–65.

The Dakota control group is presented in Table 27. We see that for ages 0–5 both sexes decrease relatively from 1909 to 1929, 6–15 about hold their own, whereas 16–20 increase. We divided adults into three groups; decreases are evident for 21–40; 41–65 tend to hold even, but an increase is observed for 66+.

INDIAN AND WHITE

The available data for white age grouping are tabulated in a slightly different manner (Table 28), but for 1930, the groupings are the same as for the Indians. Taking note of these differences, we may compare Tables 24 and 28. Among Indians we find many more children in the first age groups, 0–4 and 0–5. The conspicuous trend in the white population is the increase for 20+ and the compensating decline for children and adolescents. Among the Indians of Alberta and Saskatchewan the changes have been in reverse order.

PUEBLO INDIANS AND SPANISH AMERICANS

While in New Mexico Mrs. Sanderson examined the government records for the Pueblo villages under the Santa Fé School Jurisdiction and for comparison the records of Rio Arriba County, the population of which is almost wholly Spanish American (Table 29). The Pueblo population base was 2294 and for Rio Arriba County, 21,381.

We note that when divided according to sex, males exceed, except among the mixed bloods. However, this difference is not certain. When

the total Pueblo is compared with Rio Arriba County and with United States Indians as a whole, males exceed in all. If adults are considered, then (Table 30) these differences are emphasized. Adult women are in the minority, except in the mixed blood group. In age grouping, United States Indians and Rio Arriba County present a closely similar profile. The Pueblos, as a whole, show a higher rate for ages 0–5 and 21–65. Naturally, age groups 6–15 and 16–20 are lower. This may mean a higher birth rate for the Pueblo villages and a higher death rate for ages 6–20.

In general, the foregoing suggests that the social factors regulating the age-at-death profiles among these Spanish Americans, operate on a level comparable to the average United States Indian community. Since the tabulation is for 1934 only, trends cannot be considered. Local opinion was that the records were inaccurate, but we see consistencies in this sample suggesting that if carried over a term of years these inaccuracies will not obscure the trends and group differences.

Finally, we are indebted to Professor Li An-Che for some Zuñi data, 1935, as follows:—

Ages	Males		Females	
	Actual	Per 1000	Actual	Per 1000
0– 4	125	61	102	50
5–14	263	129	213	105
15–19	111	54	76	37
20–44	403	198	308	151
45+	254	125	181	89
Totals	1156	567	880	433

The excess of males is here greater than so far observed by us; even among the children this is noticeable.

SUMMARY

We note that for the white population in the United States the age groups 0–5, 6–15, 16–20, have decreased steadily, whereas 21+ shows a compensating increase. The six Indian tribal and group tables show that in every case 21–65 registers a decrease, which must mean that from year to year more and more Indian young people survive. Noting the subdivisions among Indian minors, it appears that they do not present the same uniformity as in case of whites; 0–5 years increase for all except the Dakota and the Cree, 6–15 show a tendency to increase throughout, but 16–20 decrease throughout. We can then revise the

above statement in that Indians 16–65 decrease relatively; the earlier ages tend to increase. This implies corresponding progressive changes in either birth or death rate, since 1900, perhaps in both.

BIRTH AND DEATH RATES

It is obvious that if Indian population is increasing, births should exceed deaths. Unfortunately, most of the data on such matters pertain to late reservation days only. So it seems best to begin with our two control groups.

THE DAKOTA GROUP

The population of the registered group in 1908 was 720, in 1929, 936; the increase has been steady (Table 31). The births and deaths were tabulated annually and are presented in the tables. If we round off deaths and births and average in five year periods the result may be seen in Table 32. No certain change is seen in the birth rate, which averages 42.

The death rate shows a change after 1915, averaging about 37. The much lower rate for the preceding years may be a statistical error, but we were unable to locate such a disturbance. On the other hand, influenza prevailed after 1915 and tuberculosis was reported as common.

A recent report for Zuñi Indians records a death rate of 42 which is much higher than the Dakota average rate, but about the same as for the years 1920–21–24–27.

The sex ratio in these Dakota births is about 106 males to 100 females. In population totals, males show an increasing lead after 1914, and the deaths show a slight excess for females.

We can now check the various tabulations for the Dakota group. Thus, from 1916 to 1930 the population gained 87 individuals. The excess of births over deaths was 84. However, a small number of males migrated, twelve went out, ten came in; twenty-three females married out, thirty-two married in. Thus, during the period of fourteen years there was a net population gain, by migration, of seven persons. If this is taken into account there is a discrepancy of four individuals in our tabulation. This is a relatively small error and does not demand a reclassification and tabulation of the register.

BIRTH RATES ON RESERVATIONS

We were not able to tabulate birth rates for the entire period, 1895–1934, but in Table 34 present a straggling sample. We have repeated

the birth rates for the Dakota control group as a check; for the Carlton group see Table 37. It is noted that the Plains tribes studied present a high, fairly uniform birth rate which averages around 44. However, our control groups average 42. The rate is approximately constant, though the totals show a slight progressive downward trend. Since Table 17 reveals an increase in minors, such a trend might be expected.

On the other hand, the Indians of British Columbia show lower birth rates, with a tendency to rise. We offer no explanation for these differences, though the original modes of life among Plains Indians are not closely similar to those in British Columbia.

Our rate for the Plains tribes is in agreement with Ferguson[1] who found a rate of about 40 for the period 1883–1926. The rate was fairly constant, but with the suggestion of a slight downward tendency. Doctor Aberle's[2] study of an Indian village in New Mexico showed a high birth rate. On the other hand, the Meriam report[3] gives the birth rate for all United States Indians as ranging from 29.0 to 31.8 for the period 1915–1925, approximately constant.

So far we have used crude birth rates, but since we have the ages of individuals in the Dakota group the average annual reproductive rate can be calculated as follows:—

Average—Women 20–44 years	Average—Children 0–4 years	Children per 1000 women
128	142	1108

However, we observe that the relative number of young children increased regularly from year to year, so the rates 981 (1909) and 1118 (1929) in Table 33 should be regarded.

While we lack the exact data for the Canadian tribal groups and bands studied, a rough estimate can be made by using the age ratios for the Dakota group. Proceeding in this way we find the reproductive rates as in Table 33. If, by the same method, we estimate the ratio of children to women for Plains Indians (Fort des Prairies) in Table 1, the result is about 1800. Osborn[4] gives 924 for United States Indians as a whole, 1051 for Chinese and 1090 for Filipino; all of which suggests that the probable rates for the Indian tribes studied are among the highest on record.

However, the reader should note that the ratios in Table 33 are

---

[1] Ferguson, 1928, 10.
[2] Aberle, 1931.
[3] Meriam, 1928, 196.
[4] Lorimer and Osborn, 1934, 43.

estimates, except for the Dakota. So the high ratios for some tribes may
be discounted. Probably the estimates for later years are the more
reliable; these range from 943 to 1301. Yet these ratios tend to be higher
than those for 1904. This need not imply an increase in the birth rate
so much as an increase in the survival of children under five years. For
example, among Indians in the United States the percentage of deaths
under three years of age fell from 41 per cent in 1914 to 23 per cent in
1920.

Some progress has been made in determining the fecundity of Indian
women. Thus, Doctor Aberle[1] made the most exhaustive study, finding
in a small Pueblo village a modal interval of twenty-four months. The
average number of births per woman was 9.4. Observations upon a
small number of Sioux women[2] suggest an average of 6.9 to 8.1.

A general résumé of our birth statistics indicates that among the
Indians of the Canadian Plains the birth rate has been roughly constant
and uniformly high, possibly near the physiological maximum. It is a
prevailing opinion that the falling birth rates among civilized whites
are due to economic and social causes, but we see here that birth rates
among the Indians studied have not been modified by such social fac-
tors. There is the additional point, that whereas the stresses of reserva-
tion life modified the death rates among Indians, they failed to change
the birth rate.

DEATH RATES ON RESERVATIONS

The trends in death rates for the control groups are seen in Tables 34
and 37. For Carlton, the trend is toward lower rates; for the Dakota
group the rate became stabilized about 1915. For the Cree, Blackfoot,
Assiniboin, and British Columbia, the trend is clearly downward.

For United States Indians as a whole, 1914–1920, the trend has been
steadily downward. The Meriam Report[3] gives the Indian rate for
Montana as 20.4 in 1925; for the whites in the same territory as 7.7.
On the other hand, the Bureau of Indian Affairs reported a death rate
of 42 for the Zuñi of New Mexico in 1934 which is comparable to some
of the death rates in Table 34.

Clements[4] was of the opinion that tuberculosis was the chief factor
in Indian mortality. Doctor Ferguson[5] presents detailed evidence in
support of this view in a special study of Indians on the Blackfoot,

---

[1] Aberle, 1931.
[2] Hrdlicka, 1931.
[3] Meriam, 1928, 196.
[4] Clements, 1931.
[5] Ferguson, 1928.

Battleford, Crooked Lake, and Qu'Appelle reservations, which are among those studied by us. Even in 1928 he finds the Indian death rate for tuberculosis was twenty times that for the surrounding white population. However, we are interested in the total death rate; Doctor Ferguson[1] finds that for the agencies listed above the death rate falls after 1904, reaching an average of about 30 in 1928 which agrees closely with our tabulation. He reports upon data preceding 1895, a period for which satisfactory records were not available to us, stating that after these Indians were placed upon reservations, death rates rose rapidly from 40 to over 100 per 1000. On the Qu'Appelle reserve the rate reached a maximum of 137 per 1000 in 1890.

The following is quoted as a summary statement:—

The general death rate, as derived from the annuity records, rose from 40 per thousand in 1881 to 127 per thousand in 1886, an increase of 87 per thousand in only six years. Vital statistics records for these reserves show that the tuberculosis death rate rose from approximately 10 per thousand in 1881 to 90 per thousand in 1886, an increase of approximately 80 per thousand in the same six years. Evidently the rise in the general death rate was due almost entirely to the increase in the tuberculosis death rate.[2]

The chief test for our data has been consistency in trends. The birth and death rates are assumed to determine whether populations grow or decline. Returning to Table 34, Blackfoot shows an unfavorable balance between birth and death rates. We find that this group lost in numbers until 1924. All the other groups gained regularly, as they should, with such favorable death and birth rates.

In general, for the Plains tribes studied, the death rate trend between 1880 and 1934 shows a sharp rise to a peak about 1890, followed by a partial recovery and then a steady decline until 1934. Hence, the death rate is the chief variable and probably the most sensitive to mode of life.

AGE AT DEATH

In 1931 Clements published an age mortality table for Indians in Arizona.[3] Later Krogman gave a similar table for the Seminole.[4] The writer published a table for the Dakota control group with a discussion of the trends in such statistics, the import of which was that age-at-death profiles were not constant.[5] The trends in age and sex grouping shown in the tabulations in this paper, could not occur unless there were

[1] Ferguson, 1928, 10.
[2] Ferguson, 1934, 2.
[3] Clements, 1931.
[4] Krogman, 1935.
[5] Wissler, 1936d.

corresponding changes in age at death profiles. In another publication[1] we demonstrated the sensitiveness of such age-at-death profiles to culture changes. In the preceding pages we noted that whereas the birth rates were constant for the groups studied, the general death rates showed definite trends, but we note in the publication just cited that the trends in total death rates are less indicative of social change than sex and age-at-death ratios. Had we such data for all the tribes studied by us, our task would have been simpler; but we were forced to approach the determination of age-at-death profiles in the age grouping of individuals.

Hence, we can pass over this important topic with the generalization that changes in mode of life may subject sex and age groups to new hazards, thus modifying the population profile. To verify the assumption that mode of life registered in the age-at-death profile, we made comparative tabulations of urban Canadian Indians as against rural Indians. In both groups, minors exceed adults, but to a greater degree among urban Indians. Sex differences were as follows: minors, about equal for rural Indians, but females leading among the urbans; among adults, males lead among rural Indians, females among the urban. These differences are marked. In age grouping the two classes were consistent with the foregoing.

THE CARLTON CREE

One of our control groups comprised the Cree under the Carlton Agency. The differences between the William Charles and the Six Bands at this agency have been noted from time to time (Tables 7, 15, and 19). In a preceding section we remarked that excess of females was usually conspicuous among adults. The Dakota control group presented a normal sex ratio in births; the age grouping data for other tribal groups gave equally normal sex ratios for the lower age groups. Hence, the excess of females could be explained neither by a low percentage of male births nor an abnormally high death rate for males under five years of age. The data we need to determine just when males fall behind, are ages at death; for the William Charles we have neither age-at-death records nor data for satisfactory age grouping, yet we do have information enabling us to classify minors and adults by sex. Further, we were able to segregate deaths in the same way (Table 35).

The first conspicuous difference is in the total death rate; that for the William Charles bands being lower than for the Six Bands. This may mean that the mode of life followed by the former is the more

---

[1] Wissler, 1936c.

favorable. Incidentally, there is a possible slight difference in the birth rates, the general average for the Six Bands being 43 and for the William Charles bands 40 per thousand.

Turning to the death rates for sex and age classes we note that in the Six Bands adults have a much lower death rate than minors, which is normal. However, there are sex differences among neither minors nor adults. The William Charles bands, however, reveal a much higher death rate for male minors; but among adults the sex rates are about equal. An examination of the annual tables indicates that whereas the death rates for male minors trend downward as we approach 1934, as do most Indian minors, there is no clearly defined change among female minors. Such a condition would reduce rather than enhance the true sex differences in death rates, since had the female death rate fallen in the usual way, the sex disparity would have been still greater. Our conclusion, then, is that at some age period before twenty-one years there is an unusual loss in males.

Further evidence that mode of life changes the death rates was observed when we classified the Carlton bands as Christian and pagan, the latter presenting the higher death rate. Anyone familiar with reservation conditions knows of many differences in the modes of life followed by these contrasting groups.

In conclusion we recall the several differences between the William Charles bands and the remainder of the group. For one, they show a lower death rate. The claim is often made that diet and tuberculosis are the chief causes in determining Indian death rates. The William Charles bands are, in part, hunters with a sprinkling of white blood. Thus white influence, more outdoor life, better balance in diet, greater occupational independence, and possibly relative freedom from tuberculosis may be predicated to the William Charles bands. All these may contribute to their favorable death rate.

On the other hand, we noted that males in these bands died at a rate far above that for females. This difference in death rate helps to explain the observed excess of adult women. We saw reason to believe that male deaths were at their peak in late adolescence and early manhood. Our guess, then, is that the hazards in hunting and trapping are the chief contributors.

We did not compile general tables to show sex differences in death rates. For the Dakota control group the average death rates of 1910–1930 were: males, 33; females, 35; for minors, males, 46; females, 46; for adults, males, 21; females, 26. According to certain census data for

United States Indians,[1] the rates were, males, 51; females, 49. About all one can say is that the total death rates show no certain sex differences.

As a further check, we tabulated the death rates at Battleford (from a copy of the Agency record). (Table 36.) Females of twenty years and under show a higher rate than males of the same ages. Both sexes present falling rates for 1905–1929, but the females have a higher rate throughout: males, 47; females, 54. These are chiefly Plains Indians, the point being that they differ from the William Charles bands (Wood Cree).

WOOD AND PLAINS CREE

One reason for segregating the William Charles bands was that they were designated as Wood Cree. Students of Indian culture know the history of these two divisions of the Cree; it so happened that when reservations were established, the Wood Cree could in part follow their old patterns of economic life. A further test, then, of the assumption that the excess of women is determined by mode of life would be to separate all of the Cree data into two divisions (Table 39). We published a preliminary paper using some of these data.[2]

Doctor David G. Mandelbaum, a student of the Cree, has been kind enough to classify the various Cree bands as in the appended list.

Data on the Wood Cree at The Pas are not available before 1910 and for the Isle a la Crosse after 1920 only (Table 40). We did not use these data in our earlier tabulations. First, we present Table 38 which gives the gross populations and Table 39 in which all the data for Wood Cree are combined as opposed to Plains Cree.

WOOD CREE FOR SASKATCHEWAN, 1934

(David G. Mandelbaum)

Battleford Agency
    Meadow Lake
    Waterhen Lake

Carlton Agency
    Big River, Kenemotoyoos
    Montreal Lake, William Charles
    Sturgeon Lake, William Twatt

Duck Lake Agency
    James Smith

---

[1] Clements, 1931.
[2] Wissler, 1936a.

John Smith
Kinistino

Isle a la Crosse Agency
Amos Charles
Barren Lands
Canoe Lake
English River
James Roberts
Lac la Hachs
Pelican Narrows
Peter Pond Lake
Portage La Loche
Pukatawagan

Onion Lake Agency
Loon Lake

Pas Agency, Manitoba
Cumberland
Red Earth
Shoal Lake

Touchwood Agency
Fishing Lake

The tabulations for adults show that females exceed in both groups, but that this excess is much greater among the Wood Cree (five women to four men). (Table 39.) Further, there is little change in the adult sex ratio for the Wood Cree from 1909 to 1934, whereas for the Plains Cree both males and females decline, especially the latter, so that the number of females in 1934 is only slightly in excess of males. In comparison with previous tabulations, it appears that this change in the relative number of adults and in adult sex ratios for the Plains Cree is similar to the progressive changes observed among certain other Plains Indians in the region studied. Naturally, all changes in adult ratios are compensated by corresponding changes for minors.

As noted in Table 39, there is little change among the Wood Cree female minors, whereas males tend to decrease. On the other hand, the number of male minors increases markedly among the Plains Cree, whereas females show little change. It may be noted further that whereas among Wood Cree adults the females are far in the lead, among minors the males lead. No certain sex difference is observable among Plains Cree minors.

In terms of the total there are about 10 per cent more minors among the Wood Cree; adults are proportionately less. Wood Cree women

approximate the number of Plains Cree women, whereas the Wood Cree men are far less than the Plains Cree. Since Plains Cree men almost equal the number of Plains Cree women after 1924 and the excess of women among the Wood Cree is still at its maximum, the contrast is striking. The situation is about the same as for the William Charles bands at Carlton, which are included in this tabulation. It appears then that the William Charles bands are typical Wood Cree in population behavior.

Though the foregoing shows that excess of women is a characteristic of Wood Cree in general, it is desirable that the data be broken down into smaller groups. Accordingly, we made a tabulation for the Plains and Wood Cree for the agencies previously studied (Table 40). We assumed that the Cree at The Pas and La Crosse were thoroughgoing Wood Cree; at least they were not subjected to rigorous reservation life until recently. It is observable in the average adult sex ratios that these new groups lead in the excess of women. Further, men and women among the Plains Cree are about equal, whereas the Wood Cree, residing upon reservations under the same jurisdictions as the Plains Cree, stand as intermediate. So this can qualify as a further test of the initial assumption. The Pas and La Crosse groups are still hunters and trappers. The Wood Cree, scattered among the Plains Cree, are far less self supporting. Thus, roughly, the excess of women increases directly as the intensity in hunting rises.

Minors are less consistent in sex ratios, they are equal for Plains Cree, but suggest an excess of males for both divisions of Wood Cree. We note that the sex differences among minors are less conspicuous than among adults.

As a further contribution we submit Table 41, in which the Wood Cree are tabulated by agencies for the year 1924. We note that female adults exceed male adults, except at Touchwood, where they are equal. Even in the totals, females lead throughout.

Finally, we tabulated age group tables for the Cree under three heads; however, we omit the table. The period was 1914 to 1934. Little difference was observed in age groups 0–5 and 6–15. In the 16–20 group all show a rapid downward trend except Plains Cree males, who are about constant. Males, 21–65, fall steadily among the Plains Cree, whereas among the Wood Cree males show a tendency to increase; females change little among the Plains Cree, but tend to decrease among the Wood Cree.

So far, we have confined our attention to the Cree. Our tabulations

included ten bands of Assiniboin, ranging from 100 to 290 individuals each, most of them exceeding 175. The table is too complicated to publish, but may be summarized. Table 14 reveals an excess of females among the Canadian Assiniboin as a whole, and the tendency, as in other Plains tribes is for this excess to be large in early reservation days and to diminish gradually. When the Assiniboin data were broken down into the twelve constituent bands, eight maintained female excesses to 1934. The annual tables are omitted, but summarized under eight groups (Table 42). Of those remaining, one, the Assiniboin Agency, Saskatchewan, shows an excess of males after 1911. The mode of life at this agency is similar to that of the Plains Cree, and so far consistent. The other is the Wesley band at the Stony Agency, Alberta, in which males are slightly in the lead after 1920. This band was until recently, living by hunting and trapping.

The most marked excess in females is to be found at the Edmonton Agency, where hunting was conspicuous, reminding one of the Wood Cree bands at this same agency, who tended to lead in female excess. The summary tabulation of Assiniboin groups shows that the total excess of women in the five bands at Edmonton is about twice that of the other four Assiniboin groups combined (Table 42).

So, when the mode of life pursued by the several Assiniboin bands is taken into account, we see that where and while hunting persisted, adult females were dominant in numbers.

DEATH AND BIRTH RATES

AMONG THE PLAINS AND WOOD CREE

In the preceding section we noted that the number of minors is greater for the Wood Cree, suggesting that there is a difference in the death rate. At the Carlton Agency we noted that the William Charles bands (Wood Cree) have a lower total death rate than the Six Bands (Plains Cree). (Table 37.) It was not expedient to tabulate death rates for the other Wood Cree, but inspection of the data indicated that the rate for the William Charles bands would be approximated.

As to birth rates there were no certain differences. Thus, we merely confirm the differences observed in the Carlton group. The total death rate for Wood Cree is lower; we assume this to mean that life is more healthful than among the Plains Cree. Thus, respecting the William Charles bands, we have cited the agent's statement (p. 15) as to their favorable mode of life.

The significance of all this is that the age-at-death frequencies are subject to fluctuations, independent of variations in the total death rate.   Sex differences in occupational hazards may also operate to change the adult sex ratio.   The mode of life followed by the Wood Cree is more like that of pre-reservation Indians than is the case with Plains Indians.   Some early data for the Plains Indians indicated a marked excess of adult women, which can then be said to be normal for the mode of life then followed.   It seems a fair assumption that since the placing of Indians upon reservations is a social phenomenon, it is in that direction we should look for the factors determining the population profiles observed.

RELIABILITY OF AGENCY ROLLS

According to the methods of recording and checking followed by the Canadian Indian Service, the most accurate counts should be in terms of total populations and sex distinctions. We have accepted these categories as basic. However, errors in estimating population growth may result from faulty records for the transfer of individuals from one agency to another. We have made corrections for such transfers where they did appear in the record, but recognize the chances for error by omission. Marriage is the usual cause for transfer, but in a test case these tended to equalize (p. 12). Probably those not recorded tend to cancel out, also. So we doubt that errors due to the migrations of individuals seriously distort the record.

The agency rolls in the United States have been challenged as failing to record all births and deaths. In Canada few living individuals will escape the count when annuity payments are made. Those dead will be checked off. However, the record of infants born and dying between payments is more or less incomplete. It would follow that the births for the year would be below the actual number; also the recorded deaths and the population total would be too low. Since the errors are all in the same direction the resultant error will be small. In general terms, if in the United States many births are not entered and the names of many dead individuals are kept on the rolls, there should be some equalization. Hence, the errors may be relative and not such as to conceal population growth. They may, however, exaggerate the rate of population change.

Our data may be checked if we note population gains and the annual birth and death rates. For example, Table 31 shows the following for the period 1908–1929:—

Births	808
Deaths	618
Gain	190
Gain per year	9.0+
Population gain (936–720)	216
Gain per year	10.2+

A gain of 1.2+ individuals per year is not accounted for by births and probably means errors in tabulating the records, plus increments by immigration, principally the latter. This suggests that the calculated

birth and death rates in other cases will fall short of the actual gain.

Respecting birth and death rates, the averages, as in Table 32 are 0.043 and 0.033, respectively, an annual gain of 0.01.   Yet an annual gain of 0.01, if compounded for twenty-one years, would show a gain of about 0.23.   The actual gain in population was 0.30.

Using the birth and death rates in our tables we note the following:—

	Years	Actual Gain	Rate of Gain B–D	Theoretical Gain
Dakota	21	0.30	0.012	0 27
Carlton (a)	10	0 19	0.014	0 16
Carlton (b)	35	0.33	0.009	0.36
Carlton-Wood Cree	20	0.45	0.018	0.39
Carlton-Plains Cree	20	0 26	0.010	0 23
Battleford	39	0 47	0 011	0.47
Total Cree	24	0 18	0.006	0 14

Close agreement is observed between the gains based upon the birth and death rates and those based upon the population counts.   The tendency is for the actual counts to give the greater gains.

We are now prepared to make additional assumptions.   Having seen that the birth rate is fairly constant, averaging 0.042+, and that the lowest death rates for recent years average 0.017+, we can expect that a gain of more than 0.025 per year introduces errors of migration and omission.   In the manner indicated above, we may test all the gains tabulated.   Those for the Canadian tribes stand the test well;   the range of differences is about the same as for the control groups.   The United States tabulations call for high birth rates and relatively low death rates.   Thus the United States Assiniboin are credited with a gain of 0.70 in thirty years;   this would call for an average yearly birth-death gain of about 0.019.   The Piegan of Montana are credited with a gain of 0.91 in forty-four years;   a birth-death gain of about 0.018. Those rates are possible but high.   For example, the Meriam report (pp. 198–201) gives a gain of 0.009 for all Indians of Montana in 1925. So we suspect that the population gains for these United States tribes are somewhat exaggerated by faulty records, especially by immigration.

Again the total populations for Saskatchewan and Alberta, 1919–1934, show total gains of 0.19 and 0.13.   At an annual birth rate of 0.042, the observed death rates of 0.031 and 0.033 would account for such increases.   These rates are comparable to the rates in Table 34.

Finally, an average birth rate of 0.042 is not the highest possible

rate. For a village in Yucatan, Steggerda[1] reports an average rate of 0.0601 for a period of seventeen years and a death rate of 0.0317. The yearly gain would be 0.0284; the population gain in seventeen years should be something over fifty per cent. The highest birth rate among Canadian groups observed by us is 0.0698, for a single year. The Yucatan death rate of 0.0317 is comparable to death rates for the Canadian Indians in Alberta and Saskatchewan.

There is no reason to suspect gross inaccuracy in sex classification. Hence, the observed excess of females is considered real. We have, however, commented upon the question of age distinctions. The classification by adults and minors in the early records may not be consistent. Practically all the groups studied were placed upon reservations before 1884. All individuals born after reservations were established and entered upon the rolls at the first payment thereafter, would have an accurate age rating. In twenty years all minors could be determined with reasonable accuracy. Hence, after 1900, such classifications should be reliable. Our main conclusions respecting reservation minors and adults are based upon data beginning in 1904. Consequently, we have given due space to minor and adult classifications, though tabulations by age groups were available.

Respecting age classification, one should note that, since registration began in 1884, all born before that time would fall into class 21+ after 1904; hence, age grouping should be reasonably accurate after that date. The uniformity in trends observed in the tabulations is a further indication of accuracy.

ABORIGINAL POPULATIONS

In most studies of Indian populations the sole objective has been to establish absolute numbers as of the time of initial white contact. In our investigations we were not especially interested in that problem, our concern being with population changes during white contact. In any event the estimates of gross aboriginal populations are highly interpretative and so subject to a wide range of personal opinion. However, our experience with the tribes of a limited area should offer some suggestions as to prehistoric population size.

What first comes to mind is the precarious existence of a non-reservation tribe. An epidemic or violent onslaught of raiders could wipe out a large fraction and the weakened remnant be harried almost to extinction. Further, we have seen that white contact brought social

---

[1] Steggerda, 1935

change and that population shifts seemed to be coincident with such changes. The history of the area studied reveals contact direct, and through intermediaries, as early as 1670. In 1690, Assiniboin and Cree equipped with firearms were raiding southward and westward; that their destructiveness was thus enhanced is indicated in the literature. It is just because such quick changes in tribal strength are in evidence, that an estimate of absolute size is precarious.

Again it is not merely the self-contained group that fluctuates thus, but the total population of areas in which there is moderate culture homogeneity. Thus about 1780 smallpox swept over the Saskatchewan area greatly reducing the population. Apparently the Assiniboin, then marginal, were not seriously weakened and spread into the area, multiplying rapidly and occupying most of it. About 1832 the same disease is said to have carried off more than two-thirds of the Assiniboin. The Cree, then marginal to the area, expanded in number over the same territory. When the buffalo went out, the Cree slumped. The whites were the next to move in and multiplied rapidly. There appears valid reason for assuming that such changes also occurred in pre-Columbian America. In the area under consideration, the horse was introduced around 1650 or earlier; there is reason to believe that this led to a rise in the standard of living, increasing population and expansion in power on the part of certain units. An historical discussion of such changes is being prepared.

Something can be predicated as to aboriginal population profiles in the area for 1600–1780. The birth rate was 42 or higher. The sex ratios for adults were around 100 males and 250 females per thousand population. Minors exceeded adults and for the age group 16–20, females led in number. The total death rate was relatively low, probably averaging around thirty. These assumptions are based upon our experience with population trends after 1780.

Since many persons are interested in absolute numbers, we note that Henry's count for 1805 was 64,361, a density of about 0.3+ persons per square mile. We have under way an ecological study of the area which indicates that a larger population could have been maintained without a change in prevailing food habits. Around 1780 smallpox swept this area. So 1750 may have presented a population somewhat in excess of 70,000, ranging from the Upper Missouri to the forests north of the Saskatchewan. This is not to say that it did, merely that barring massacres and epidemics, such a population would be a reasonable expectation.

Finally we return to the census recorded by Henry (Table 1). A study of the various entries in Henry's diary suggests that under the term Fort des Prairies he intended to include all the tribes of the Upper Missouri, as well as those ranging in the Saskatchewan country and subject to the fur trade by his and competing companies operating from Canada and Hudson Bay. The list would include the Plains tribes discussed in this paper and, in addition, the Crow, Cheyenne, Arapaho, Mandan, and Hidatsa. Mooney's[1] total for all these tribes is 60,300 as against Henry's 64,361. However, it is practically certain that Henry included some of the Ojibway, a few of the Dakota, and some Chipewyan; if these are counted in, Henry and Mooney would be in even closer agreement. However, since Henry fails to state explicitly the significance of Fort des Prairies (Table 1), the agreement with Mooney is not important, except that since Mooney does not cite Henry, his own estimates were apparently not influenced thereby.

---

[1] Mooney, 1928, 13.

GENERAL SUMMARY

1. In our first paper on gross population trends we demonstrated that while numbers decreased for a time after the Plains Indians were placed upon reservations, there was an adjustment eventually, and that since that event these tribal populations have increased. In this paper we present data for British Columbia which show a less marked reaction to reservation life, but, in the aggregate, reveal a tendency to increase during the last decade.

2. A relatively large number of adult females is the striking characteristic of the tribes of the Northern Plains. This disparity was even more accentuated in pre-reservation days, but on reservations the trend has been toward sex equality and eventually to an excess of adult males. Since the birth sex-ratio is normal we must look to the death rate for an explanation. Groupings by age and sex suggest that in tribes where excess of women is conspicuous, the deaths among late adolescent and young adult males are excessive. We have assumed that these changes are coincident with changes in the mode of life.

In pre-reservation days the large herds of bison and other game insured an abundant food supply and the introduction of the horse in pre-fur-trade days made it easy for one man to feed a number of women and their children. Possibly this economic security increased warpath activities and the unusual leisure led to a greater number of male homicides. Thus, writers of the fur-trade period regarded the male deaths due to drinking bouts as high. Among bison hunters the depletion of males might be considerable, without seriously effecting the well-being of the women and children.

While we have not worked over the data for other tribes there are indications that most Plains tribes in the United States were formerly characterized by an excess of women. In British Columbia the reservation period opened with an excess of women, so it is possible that most North American tribes, largely dependent upon hunting, lived under social and economic conditions favorable to the survival of adult women. However this may be, the evidence for the tribes studied by us leaves no room to doubt that the causes of the phenomena are social, such as hunting hazards, homicide, etc.

3. The Indian birth rate is high, probably not much below the physiological maximum. In the area under consideration, there is no reason to believe that this rate was lower in pre-reservation days than at present. So while in civilized countries social and economic factors

seem to manipulate the birth rate, the Canadian Plains Indian rate has remained roughly constant throughout the violent culture conflicts of the reservation period. What data we have for reproduction rates show that the number of surviving children per woman is rising among Indians, but falling among the whites. In case of the Indian this means that the survival rates for children are rising.

4. In contrast to the birth rate, Indian death rates are seemingly sensitive to social conditions. The general trend of the death rate was upward in early reservation days, reaching its peak about 1890, then falling decisively until about 1900, since which date the decline has been slow but steady. Ferguson's tables suggest that the pre-reservation death rate was about 30 per thousand, the 1890 rate more than 100 per thousand, and the present rate about 25 per thousand. Such changes are consistent with the trends in gross population noted in our first paper. When the birth rate is constant, the rates of increase or decrease in a population are determined by the death rate.

5. In comparing minors and adults, we noted that whereas among present United States whites, adults are clearly in excess, among United States Indians, as a whole, adults and minors are approximately equal. About the same relation holds for Canadian Indians as a whole. In pre-reservation days the tribes we have studied possessed an excess of minors, which is consistent with the observed preponderance of adult females.

The early reservation period reveals an excess of adults over minors; presumably the loss of the buffalo and the consequent social chaos were unfavorable to the survival of children. Yet after 1900 the tribes studied tend to a reverse trend in that minors increase with the years. The continued high birth rate and the falling death rate seem to explain this, the gain being sufficient to overcome the relative decrease in the number of women. Further consistency appears in that the few tribes still losing population have more adults than minors.

6. In addition to data as to minors and adults we found some information as to age grouping, chiefly after 1900. These data indicate a steady increase of Indian children under fifteen years, probably due to improved living conditions. Since our tabulations are in relative terms, it follows that Indians sixteen years and over have declined in population. However, the greatest decline is for the years sixteen to twenty. Tuberculosis has been regarded as the chief factor here. Yet Ferguson shows that for some of the same tribes studied by us the peaks for deaths due to tuberculosis progressed from age group 0–5 years at the outset to

15–19 years in 1927–1932[1].   In short, the population age profiles were not constant, but subject to trends throughout the reservation period.

7.   It is usually difficult to establish sequential relations between social changes and population shifts, but in this study there are at least suggestive coincidences.   Thus, the birth rate did not appreciably change among these Indians, but the death rates, age-at-death, adult sex ratios, and age profiles did change in apparent unison with economic and social changes.   Death rates can be roughly correlated with occupational hazards, disease and crime.   Further, dividing the Cree into Wood and Plains groups, morphologically alike, but differing in modes of life, revealed corresponding differences in death rates and sex ratios. Again, the Wood Cree seem to be living under a social regime similar in effect to that of the pre-reservation period.   Except in birth rate, the trends are toward the present United States and Canadian white population characteristics.   Probably the birth rate will respond eventually.

In general, such population studies as we have made here may be one way of determining the degree of acculturation for our Indian tribes, i.e., when their population characteristics approximate those for the corresponding classes in the surrounding white population, they will be following the same order of life as the whites.

---

[1] Ferguson, 1933, 4.

TABLES

TABLE 1

HENRY'S POPULATION TABLE FOR 1805

Region	Men		Women		Children	
	No.	Per 1000	No.	Per 1000	No.	Per 1000
Athabasca River	55	345	38	240	66	415
English River	211	122	380	223	1100	655
Rat River	70	226	90	290	150	484
Fort des Prairies	4823	74	13,632	212	45,906	714
Fort Dauphin	19	284	17	253	31	463
Upper Red River	1170	241	1200	246	2500	514
Lower Red River	160	266	190	316	250	418
Lake Winipic	90	228	111	282	194	490
Lac la Pluie	103	233	141	323	195	444
Fond du Lac	449	142	784	246	1944	612
Nepigon	238	290	283	346	299	364
Kamanistiquia						
Mille Lacs and Lac des Chiens	70	210	84	254	178	536
Le Pic	44	301	45	305	58	394
Total	7502	97	16,995	220	52,871	683

TABLE 2

THE BLACKFOOT GROUP—VAUGHAN, 1858

	Tents	Men	Women	Children	Total
Piegan	460	900	1200	1600	3700
Blood	300	500	800	1100	2400
Blackfoot	150	260	400	540	1200
Gros Ventre	265	400	700	1000	2100

TABLE 3

MINORS AND ADULTS—LAWRENCE, 1875

	Adults	Children
Europeans		
France	639	361
Belgium	587	413
Holland	574	426
Great Britain	547	453
Prussia	526	474
Indians		
Cheyenne	425	575
Little-Wound band	455	545
Young-man-afraid-of-his-horses	462	538

TABLE 4

GROSS POPULATIONS

Date	1884	1904	1934
Western Cree	10,032	6840	9016
Canadian Assiniboin	1945	1721	1813
United States Assiniboin	2195	1272	2108
Blackfoot	2173	845	765
Blood	2278	1196	1293
Canadian Piegan	929	506	438
United States Piegan	2300	2059	3947
Sarsi	429	206	156
Totals	22,281	14,645	19,536

TABLE 5

POPULATION IN BRITISH COLUMBIA

Year	Babine, etc.	Northwest Coast	Kwawkewlth	Cowichan	West Coast	Fraser River	Kamloops, etc.	Williams Lake	Kootenay	Totals
1896	3854	3994	1639	2029	2760	3381	3551	1899	562	23,669
1899	2861	4041	1554	1884	2481	2961	3701	1928	541	21,952
1904	2951	3925	1317	1893	2303	2881	3882	1958	603	21,713
1909	3134	3902	1263	1760	2055	2838	3829	1995	586	21,362
1914	3272	4020	1183	1713	1833	2799	4148	2121	595	21,684
1919	3312	3955	1140	1712	1779	2763	4105	2021	582	21,369
1924	3201	4054	1039	1813	1651	2664	3722	1953	501	20,598
1929	3636	4144	1088	1892	1626	2778	3566	2086	499	21,315
1934	3597	4279	1173	2032	1622	2845	3815	2423	496	22,282

TABLE 6

THE DAKOTA CONTROL GROUP

Year	Males		Females	
	Actual	Per Thousand	Actual	Per Thousand
1909	383	515	361	485
1914	417	499	418	501
1919	437	508	422	491
1924	471	523	429	477
1929	483	520	445	480

TABLE 7

SEX RATIOS FOR THE CARLTON AGENCY PER THOUSAND POPULATION

	Six Bands			William Charles Bands			All Bands		
Years	M.	F.	Population	M.	F.	Population	M.	F.	Population
1899	508	492	727	462	538	147	485	515	874
1904	478	522	713	455	545	165	467	533	878
1909	490	510	777	465	535	192	477	523	969
1914	481	519	840	470	530	231	475	525	1071
1919	485	515	905	471	529	265	478	522	1170
1924	479	521	929	453	547	275	467	533	1204
1929	471	529	991	457	543	296	464	536	1287
1934	481	519	1062	461	539	335	470	530	1397

TABLE 8

MIGRATIONS OF WOMEN DUE TO MARRIAGE--CARLTON, 1896-1932

Marry In

	From other Carlton Bands	From other Agencies	Totals
Band 104	11	22	33
Band 106	12	11	23
Pelican Lake	9	8	17
Wm. Charles	16	7	23
Band 101	22	12	34
Band 103	5	21	26
Band 102	22	21	43
Totals	97	102	199

Marry Out

	Into other Carlton Bands	Into other Agencies	Totals
Band 104	24	22	46
Band 106	17	13	30
Pelican Lake	5	6	11
Wm. Charles	23	15	38
Band 101	17	18	35
Band 103	10	16	26
Band 102	7	17	24
Totals	103	107	210

TABLE 9

SEX RATIOS FOR THE WESTERN CREE PER THOUSAND POPULATION[1]

Year	Duck Lake		Hobbema		Onion Lake		Saddle Lake		Edmonton		Qu'Appelle		Battleford		Crooked Lake		Touchwood	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1900	506	494	494	506	474	526	514	486	430	570	446	554	503	497	464	536	500	500
1904	498	502	486	514	482	518	491	509	462	538	458	542	499	501	479	521	503	497
1909	479	521	523	497	466	534	490	510	435	565	467	533	494	506	471	528	493	507
1914	503	497	518	482	484	516	480	520	495	505	436	564	473	527	472	528	505	495
1919	499	501	506	494	474	526	483	517	445	555	475	525	474	526	459	541	518	482
1924	491	509	503	497	505	495	473	527	435	565	481	519	510	490	468	532	479	521
1929	503	497	508	492	520	480	480	520	454	546	472	528	515	485	480	520	468	532
1934	481	519	512	488	511	489	476	524	403	597	474	526	513	487	485	515	482	518

[1] For Carlton Agency see Table 7.

46

TABLE 10

Males and Females by Tribal Groups per Thousand Population[1]

Date	Assiniboin U.S. Fort Peck		Assiniboin U.S. Fort Belknap		Assiniboin Canada		Piegan U.S.		Blood Canada		Blackfoot Canada		Western Cree Canada	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1890	...	...	...	...	...	...	479	521	...	...	...	...	...	533
1894	448	552	482	518	485	515	...	...	...	...	...	...	467	511
1899	471	529	478	522	500	500	494	506	475	525	507	493	489	517
1904	465	535	472	528	501	499	495	505	478	522	547	453	483	516
1909	495	505	513	487	498	502	495	505	483	517	528	472	486	515
1914	496	504	512	488	500	500	498	502	491	509	513	487	485	514
1919	514	486	520	480	498	502	531	469	484	516	522	478	486	515
1924	504	496	532	468	498	502	508	492	505	495	513	487	485	515
1929	505	495	531	469	503	497	517	483	513	487	511	489	488	512
1934	498	502	527	473	491	509	521	479	508	492	520	480	482	518

[1] The actual populations are given in a preceding paper, Wissler, 1936b, 11–12.

47

TABLE 11

BRITISH COLUMBIA SEX RATIOS PER THOUSAND POPULATION

	Stickine		Babine		Northwest Coast		West Coast		Kwawkewlth		Cowichan		Fraser		Kamloops		Williams Lake		Kootenay		Lytton		Total	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1897	...	...	...	...	502	498	491	509	529	471	489	511	505	495	518	482	486	514	514	486	...	...	503	497
1899	...	...	510	490	505	495	498	502	517	483	489	511	506	494	503	497	501	499	486	514	...	...	503	497
1904	.	...	496	504	519	481	494	506	552	448	495	505	505	495	504	496	511	489	506	494	.	...	508	492
1909	546	454	495	505	516	484	495	505	534	466	489	511	486	514	502	498	512	487	497	503	...	...	503	497
1914	528	472	493	507	521	479	498	502	532	468	495	505	488	512	504	496	495	505	508	492	498	502	503	497
1916	524	476	495	505	522	478	496	504	532	468	499	501	494	506	498	502	502	498	493	507	498	502	504	496
1924	514	486	481	519	516	484	502	498	522	478	494	506	486	514	488	512	496	504	480	520	503	497	506	494
1929	506	494	492	508	516	484	518	482	532	468	486	514	491	509	501	499	507	493	478	522	510	490	504	499
1934	539	461	523	477	510	490	494	506	539	461	466	532	499	501	505	495	502	498	482	518	513	487	506	494

TABLE 12

SOME COMPARATIVE SEX RATIOS

Date	Indian Total U. S.		Indian Total Canada		Indians Alberta and Saskatchewan		White Total U. S.	
	M.	F.	M.	F.	M.	F.	M.	F.
1899	504	496	500	500	488	512	509	491
1904	...	.	501	499	488	512	...	...
1909	509	491	498	502	486	514	510	490
1914	...	. .	500	500	492	508	...	...
1919	512	488	498	502	496	504	507	493
1924	...	...	498	502	487	513	...	...
1929	512	488	503	497	494	506	505	495

TABLE 13

SEX COMPOSITION OF POPULATIONS IN DIFFERENT COUNTRIES[1]

Country	Year	Per Cent of Total Population		Ratio of Males to 100 Females
		M.	F.	
China	1920–31	52.3	47.7	109
United States	1930	50 6	49.4	102
England and Wales	1920	47.7	52.3	91
France	1920	47.5	52.5	91
Germany	1920	48.4	51.6	94
Sweden	1920	49.1	50.9	96

[1] Chiao, 1933, 29

TABLE 14

MALES, FEMALES, ADULTS, AND MINORS PER THOUSAND POPULATION

| | Western Cree | | | | Canada Assiniboin | | | | Blood | | | | Blackfoot | | | |
| | Adults | | Minors | | Adults | | Minors | | Adults | | Minors | | Adults | | Minors | |
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1894	243	321	224	212	254	320	233	193	244	349	...	..[1]	243	316	...	...[2]
1899	286	298	203	213	242	290	248	220	256	286	210	178	255	323	...	...[2]
1904	234	268	249	249	199	250	291	260	246	341	235	178	276	299	271	154
1909	222	250	264	264	236	285	235	244	224	283	261	232	236	246	293	225
1914	222	253	263	262	237	268	259	236	258	263	235	244	300	307	213	180
1919	218	248	268	266	240	264	252	244	246	259	238	257	300	288	222	190
1924	225	257	260	258	242	261	245	252	262	236	245	257	301	271	212	216
1929	235	254	253	258	256	273	231	240	243	234	272	251	295	264	217	224
1934	225	242	257	276	244	247	247	262	270	216	237	277	254	223	267	256

[1] Total minors 407.
[2] Total minors 441 and 422.

50

TABLE 15

ADULT MALES AND FEMALES IN THE CARLTON AND DAKOTA GROUPS

	William Charles Bands		Six Bands		All Bands		Dakota	
	M.	F.	M.	F.	M.	F.	M.	F.
1904	177	212	227	282	. . .	. . .	. .	. . .
1909	211	255	210	261	212	258	271	261
1914	220	250	213	255	217	252	250	268
1919	198	229	188	236	192	232	253	253
1924	184	244	224	263	208	254	259	252
1929	187	244	226	272	206	258	245	205

TABLE 16

ADULTS AND MINORS FOR BRITISH COLUMBIA

	Minors		Adults		Totals Minors	Totals Adults
	M.	F.	M.	F.		
1895	196	186	308	310	382	618
1899	200	190	303	307	390	610
1904	213	203	295	289	416	584
1909	219	205	289	287	425	575
1914	232	221	274	273	453	547
1919	241	233	264	262	474	526
1924	230	231	275	264	461	539
1929	234	238	271	257	472	528
1934	251	236	275	238	487	513

TABLE 17

ADULTS AND MINORS BY TRIBAL GROUPS

Year	Cree		Assiniboin		Blood		Blackfoot	
	Adults	Minors	Adults	Minors	Adults	Minors	Adults	Minors
1894	564	436	574	426	593	407	559	441
1899	584	416	531	469	642	388	578	422
1904	501	499	449	551	587	413	575	425
1909	472	528	521	479	507	493	482	518
1914	475	525	505	495	520	480	507	493
1919	466	534	504	496	506	494	589	411
1924	482	518	502	498	498	502	572	428
1929	489	511	529	471	477	523	560	440

TABLE 18

MINORS AND ADULTS—DAKOTA GROUP

Year	Minors			Adults		
	M.	F.	Totals	M.	F.	Totals
1909	243	225	468	271	261	532
1914	250	234	484	250	266	516
1919	256	238	494	253	253	506
1924	265	224	489	259	252	511
1929	259	248	507	245	248	493

TABLE 19

MINORS AND ADULTS—CARLTON

William Charles

Year	Minors			Adults		
	M.	F.	Totals	M.	F.	Totals
1904	278	333	611	177	212	389
1909	254	280	534	211	255	466
1914	250	280	530	220	250	470
1919	273	300	573	198	229	427
1924	269	303	572	184	244	428
1929	270	299	569	187	244	431
1934	238	283	521	222	257	479

Six Bands

Year	Minors			Adults		
1904	250	241	491	227	282	509
1909	278	251	529	210	261	471
1914	267	265	532	213	255	468
1919	298	278	576	188	236	424
1924	257	256	513	224	263	487
1929	245	257	502	226	272	498
1934	255	266	521	225	254	479

TABLE 20

MINORS AND ADULTS—UNITED STATES INDIANS

Year	Minors			Adults		
	M.	F.	Totals	M.	F.	Totals
1910	271	265	536	237	227	464
1920	259	261	520	248	232	480
1930	254	251	505	259	236	495

TABLE 21

AGE GROUPS FOR THE WESTERN CREE PER THOUSAND POPULATION

	1903		1904		1909		1914		1916		1924		1929		1934	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0–5	102	100	99	101	101	111	95	103	110	120	91	95	90	102	96	112
6–15	101	92	98	96	100	89	107	94	101	91	122	115	107	103	113	116
16–20	51	47	50	46	54	56	54	53	55	54	53	54	54	50	48	48
21–65	214	245	216	245	210	230	208	230	197	216	201	198	211	224	201	212
66+	20	27	21	27	20	28	23	31	23	33	32	39	26	33	24	30
Totals	488	511	484	515	485	512	487	511	486	514	499	501	488	512	482	518

TABLE 22

BLOOD INDIANS BY AGE AND SEX PER THOUSAND POPULATION

Date	1900		1904		1909		1914		1919		1924		1929	
Population	1185		1195		1174		1154		1154		1158		1204	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0–5	84	64	89	68	117	116	93	96	96	126	84	110	118	122
6–15	81	58	77	58	96	81	83	95	83	81	116	110	97	108
16–20	62	50	67	52	46	36	59	53	58	48	44	38	55	20
21–65	232	326	230	323	217	255	236	235	235	232	236	202	221	198
66+	20	23	18	18	8	28	24	27	12	29	25	35	23	38
Totals	479	521	481	519	484	516	495	506	484	516	505	495	514	486

TABLE 23

BLACKFOOT INDIANS BY AGE AND SEX PER THOUSAND POPULATION

Date	1900		1904		1909		1914		1919		1924		1929	
Population	896		845		795		737		731		695		724	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0–5	51	40	65	54	108	87	84	75	93	77	94	109	69	99
6–15	116	102	92	44	89	73	79	75	85	77	88	92	106	98
16–20	48	46	114	56	96	65	50	31	44	37	30	14	41	26
21–65	272	282	264	258	225	233	289	290	289	276	269	233	272	231
66+	20	23	12	41	10	14	11	16	10	12	32	39	24	34
Totals	507	493	547	453	528	472	513	487	521	479	513	487	512	488

TABLE 24

POPULATION RATIOS ACCORDING TO SEX AND AGE—ALBERTA AND SASKATCHEWAN

Date	1900		1904		1909		1914		1919		1924		1929		1934[1]	
Population	12,789		12,480		12,898		13,232		14,765		19,261		20,630		22,778	
Age	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0–5	99	92	98	94	104	108	104	104	102	110	90	95	88	94	106	113
6–15	100	88	96	85	101	90	100	93	94	92	118	114	112	110	114	112
16–20	55	48	60	50	53	49	50	48	62	57	54	50	59	52	52	44
21–65	216	256	218	254	212	236	216	228	218	220	199	215	210	215	201	203
66+	18	28	19	26	18	29	25	32	19	26	26	39	28	32	24	31
Totals	488	512	491	509	488	512	495	505	495	505	487	513	497	503	497	503

1 1934 age—0–6, 7–16, 17–22, 22–65, and 66+.

54

TABLE 25

POPULATION BY AGE AND SEX—BRITISH COLUMBIA

Date	1897		1899		1904		1909		1914		1916		1924		1929		1934	
Age	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F
0-5	77	74	79	76	81	77	78	73	81	76	86	80	73	80	72	76	91	96
6-15	81	75	77	72	86	84	94	90	99	94	97	94	112	106	110	112	117	117
16-20	38	37	44	42	46	42	47	42	52	51	58	59	45	44	52	51	43	43
21-65	287	286	280	281	269	264	260	254	250	245	241	237	245	232	235	221	221	204
66+	21	24	23	26	21	25	28	34	24	28	23	25	30	33	36	35	34	34
Totals	504	496	503	497	503	497	507	493	506	494	505	495	505	495	505	495	506	494

TABLE 26

INDIAN POPULATIONS BY AGE AND SEX

Date	U. S. Indian 1910		U. S. Indian 1920		U. S. Indian 1930		Canada Indian 1929	
Age	M.	F.	M.	F.	M.	F.	M.	F.
0– 5	90	90	81	82	70	69	81	82
6–15	127	122	128	128	130	128	109	106
16–20	54	53	50	51	54	54	60	56
21–65	212	199	225	209	230	209	218	216
66+	25	28	23	23	29	27	32	33
Totals	508	492	507	484	513	487	500	493

TABLE 27

THE DAKOTA GROUP BY AGE AND SEX

Date	1909		1914		1919		1924		1929	
Age	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0– 5	89	81	110	103	95	95	107	84	90	93
6–15	110	101	105	103	121	101	122	111	116	108
16–20	44	43	35	28	37	42	36	29	53	47
21–40	142	134	132	132	126	117	119	112	112	107
41–65	108	102	96	110	94	100	107	100	102	92
66+	15	19	17	22	27	34	24	36	33	32
Unknown Age	6	6	5	2	8	2	9	4	10	5
Totals	514	486	500	500	508	491	524	476	516	484

TABLE 28

UNITED STATES WHITE POPULATION BY AGE AND SEX

Date	1880		1890		1900		1910		1920		1930[1]	
Age	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0– 4	79	76	67	65	68	66	67	65	64	62	69	67
5–14	137	133	124	120	122	118	114	111	116	113	112	109
15–19	53	54	52	52	52	51	52	51	48	48	48	48
20–64	222	215	242	233	245	233	253	239	254	245	252	246
65+	15	16	19	20	21	20	22	22	22	22	22	22
Unknown	...	...	5	1	3	1	2	2	1	5	3	2
Totals	506	494	509	491	511	489	510	490	505	495	506	494

[1] Ages 0–5, 6–15, 16–20, 21–65, 66+.

TABLE 29

AGE GROUPING, NEW MEXICO

Date	Pueblo 1934		Mixed Pueblo 1934		Total Pueblo 1934		Rio Arriba Co. 1930		Total U. S. Indian 1930	
Age	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
0– 5	83	89	92	74	84	86	67	75	70	69
6–15	110	104	107	107	110	105	131	129	130	128
16–20	48	46	33	46	46	46	51	51	54	54
21–65	247	234	242	242	246	235	230	219	230	209
66+	22	16	23	36	23	19	27	20	29	27
Totals	510	489	497	505	509	491	506	494	513	489

TABLE 30

MINORS AND ADULTS, NEW MEXICO, 1930

	Adults		Minors	
	M.	F.	M.	F.
Pueblo Mixed	265	278	232	227
Pueblo Pure	269	250	241	239
Total Pueblo	269	254	240	237
Spanish American	257	239	249	255
Total U. S. Indian	259	236	254	251

TABLE 31

THE DAKOTA GROUP

Year	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Population	720	744	771	784	805	802	835	818	856	876	859	860	869	874	877	887	900	900	920	914	930	936
Male	357	383	385	389	410	407	417	406	431	448	437	437	442	447	458	465	471	475	480	476	485	483
Female	363	361	386	395	395	395	418	412	425	428	422	423	427	427	419	422	429	425	440	438	445	453
Births																						
Male	14	21	20	17	23	12	19	16	18	26	10	21	16	23	25	19	26	18	22	22	16	20
Female	11	17	12	24	16	15	22	13	25	19	15	20	17	21	11	14	20	22	26	19	17	23
Deaths																						
Male	5	9	7	13	2	16	8	9	14	18	20	8	22	21	11	13	20	19	17	25	11	19
Female	11	15	10	10	18	10	10	18	17	12	24	14	13	19	15	13	19	15	15	16	15	17

TABLE 32

Birth and Death Rates per Thousand Population—Dakota Group

Date	Deaths	Births
1908–10	28	42
1911–15	28	43
1916–20	37	43
1921–25	37	45
1926–29	36	44

TABLE 33

Estimated Number of Children 0–4 Years per Thousand Women 20–44 Years

	Children	Date	Children	Date
British Columbia	787	1904	1098	1934
Blood	662	1904	1301	1934
Blackfoot	777	1904	1282	1934
Western Cree	1016	1904	1204	1934
Wood Cree	1202	1909	943	1934
Plains Cree	986	1904	1223	1934
Carlton—William Charles	1376	1904	1109	1934
Carlton—Six Bands	952	1904	1122	1934
Dakota	981	1909	1118	1929
Assiniboin	1205	1904	1193	1934
U. S. Indian	1170	1910	1291	1930

TABLE 34

Birth and Death Rates for Reservation Indians

	Cree		Battleford[1]		Blackfoot		Assiniboin[2]		Dakota		Average Rates		British Columbia	
	B.	D.	B.	D.	B.	D.	B.	D.	B.	D.	B.	D.	B.	D.
1895–99	46	45	..	..	43	59	47	44	..	..	45	49	30	35
1900–04	50	49	..	..	44	67	50	45	..	..	48	53	33	45
1905–09	53	35	48	43	39	37	41	21	42	28	44	33	37	35
1910–14	..	..	49	47	45	55	40	38	43	28	44	42	36	37
1915–19	..	..	45	47	44	46	45	35	42	37	44	41	39	33
1920–24	..	.	45	24	..	.	..	..	42	37	43	30	.	..
1925–29	..	.	43	31	.	.	.	.	44	36	43	33	..	.

[1] Cree.
[2] Canada.

(64)

TABLE 35

DEATH RATES PER THOUSAND FOR EACH CLASS, CARLTON

Six Bands

	Minors			Adults		
	M.	F.	Totals	M.	F.	Totals
1895–1899	45	51	48	40	25	32
1900–1904	72	54	64	25	38	32
1905–1909	40	50	45	22	18	20
1910–1914	42	39	41	25	28	27
1915–1919	31	38	34	34	35	34
1920–1924	38	43	40	30	29	30
1925–1929	34	33	34	26	21	23
1930–1932	32	25	28	21	33	27
Averages	42	42	42	28	28	28

William Charles Band

1895–1899	33	18	25	..	..	..
1900–1904	55	15	35	18	5	11
1905–1909	36	30	33	16	17	17
1910–1914	37	33	35	19	13	16
1915–1919	40	16	28	16	17	17
1920–1924	20	32	26	17	24	21
1925–1929	20	15	18	9	18	14
1930–1932	28	20	24	8	15	12
Averages	34	22	28	15	16	15

TABLE 36

DEATH RATES FOR THE CREE AT BATTLEFORD

Period	Boys	Girls	Adults	Total Deaths
Age	0–20	0–20	21+	
1905–1909	47	76	29	43
1910–1914	62	64	33	47
1915–1919	69	52	35	47
1920–1924	30	35	16	24
1925–1929	39	44	21	31

TABLE 37

AVERAGE BIRTH AND DEATH RATES PER THOUSAND POPULATION FOR SUCCESSIVE
FIVE-YEAR PERIODS—CARLTON

	Six Bands			William Charles Band			Total		
			Average			Average			Average
	Births	Deaths	Pop.	Births	Deaths	Pop.	Births	Deaths	Pop.
1899	42	42	727	42	16	147	42	38	874
1904	49	54	713	44	23	165	48	48	878
1909	50	36	777	31	25	192	46	34	969
1914	42	32	840	35	27	231	41	31	1071
1919	41	37	905	42	22	265	41	34	1170
1924	44	37	929	37	26	275	42	35	1204
1929	42	30	991	36	15	296	41	27	1287
1932	46	33	1062	48	19	335	46	29	1397

TABLE 38

POPULATION OF THE PLAINS AND WOOD CREE

	Plains Cree	Wood Cree
1909	3327	1535
1914	3002	1667
1919	2962	1777
1924	3233	3070[1]
1929	3409	4351
1934	3949	4661

---

[1] Le Pas and later Isle a la Crosse agencies were added

TABLE 39

SEX RATIOS FOR WOOD AND PLAINS CREE

Wood Cree

	Minors		Adults		Total	
Date	M.	F.	M.	F.	M.	F.
1909	284	259	211	247	495	505
1914	285	265	201	248	486	514
1916[1]	280	273	200	247	480	520
1924	273	269	204	255	477	523
1929	269	265	211	255	480	520
1934	270	268	210	252	480	520

Plains Cree

1909	239	248	241	270	482	518
1914	230	242	257	270	488	515
1916[1]	241	248	248	265	488	512
1924	254	242	244	260	498	502
1929	253	248	245	254	498	502
1934	263	267	233	237	496	504

TABLE 40

MINORS AND ADULTS AMONG THE PLAINS AND WOOD CREE

SMOOTHED SERIES

Minors

	Plains		Wood		Le Pas		Le Pas and La Crosse	
	M.	F.	M.	F.	M.	F.	M.	F.
1910–14	254	257	299	257	252	255	. . .	. . .
1915–19	253	252	292	256	250	274	. . .	. . .
1920–24	257	248	285	250	. . .	. . .	276	276
1925–29	254	252	263	250	. . .	. . .	284	269
1930–34	256	257	255	255	. . .	. .	282	255
Average	254	254	277	255	. . .	. . .	269	261

Adults

1910–14	245	243	197	247	217	275	. . .	. . .
1915–19	245	249	205	247	225	274	. . .	. . .
1920–24	241	253	203	247	. . .	. . .	189	259
1925–29	242	251	235	246	. . .	. .	197	252
1930–34	240	246	242	246	. . .	. . .	204	258
Average	243	248	220	247	. . .	. . .	206	264

[1] Data for 1919 not available.

TABLE 41

Wood Cree in 1924

Agencies	Minors		Adults		Total	
	M.	F.	M.	F.	M.	F.
Touchwood	243	271	243	243	486	575
Onion Lake	283	255	208	255	491	510
Duck Lake	251	242	242	266	493	508
Carlton	262	282	208	248	470	530
Battleford	267	263	218	252	485	515
La Crosse	283	287	174	255	457	542
Pas	251	240	238	270	489	510

TABLE 42

Average Sex Ratios, 1900–1934

	Minor		Adult	
	M.	F.	M.	F.
Alexander Band (Edmonton)	229	225	246	299
Enoch Band (Edmonton)	241	217	265	279
Joseph Band (Edmonton)	278	303	199	220
Paul Band (Edmonton)	291	245	229	234
3 Bands (Stony-Morley)	233	256	242	270
Carry-the-Kettle (Assiniboin Agency)	224	232	271	273
White Bear (Moose Mt.)	252	234	244	270
Mosquito—3 Bands (Battleford)	200	235	273	292

BIBLIOGRAPHY

ABERLE, SOPHIA B. DE
    1928.   Frequency of Childbirth among Pueblo Indians [Abstract] (The Anatomical Record, vol. 38, pp. 1–2, Philadelphia, 1928).

ABERLE, S. B. D.
    1931.   Frequency of Pregnancies and Birth Interval among Pueblo Indians (American Journal of Physical Anthropology, vol. 16, pp. 63–80, Philadelphia, 1931).

ANNUAL REPORTS OF THE COMMISSIONER OF INDIAN AFFAIRS TO THE SECRETARY OF THE INTERIOR. Washington, 1855–1934.

ANNUAL REPORTS OF THE DEPARTMENT OF INDIAN AFFAIRS, DOMINION OF CANADA. Ottawa, 1871–1934.

BARBER, E. A.
    1877.   The Seven Towns of Moqui (American Naturalist, vol. 11, pp. 728–731, Boston, 1877).

CHIAO, CHI-MING
    1933.   A Study of Chinese Population (Reprinted from the Quarterly Bulletin, Milbank Memorial Fund, vol. 11, no. 4, pp. 1–56, 1933).

CLEMENTS, FORREST
    1931.   Racial Differences in Mortality and Morbidity (Human Biology, vol. 3, pp. 397–419, Baltimore, 1931).

FERGUSON, R. G.
    1928.   Tuberculosis among the Indians of the Great Canadian Plains. Preliminary Report of an Investigation being carried out by the National Research Council of Canada (Reprinted from the Transactions of the Fourteenth Annual Conference of the National Association for the Prevention of Tuberculosis [England], pp. 1–51, London, 1928).
    1933.   The Indian Tuberculosis Problem and Some Preventive Measures (Reprinted from the Transactions of the Twenty-ninth Annual Meeting of the National Tuberculosis Association, pp. 1–14, 1933).
    1934.   Some Light Thrown on Infection, Resistance and Segregation by a Study of Tuberculosis among Indians (Reprinted from the Transactions of the American Clinical and Climatological Association, pp. 1–9, 1934).

HENRY, ALEXANDER AND THOMPSON, DAVID
    1897.   New Light on the Early History of the Greater Northwest. The Manuscript Journals of Alexander Henry and David Thompson. Edited by Elliott Coues. 3 vols. New York, 1897.

HODGE, F. W. (Editor)
    1913.   Handbook of Indians of Canada (Published as an Appendix to the Tenth Report of the Geographic Board of Canada. Reprinted by permission of Mr. F. W. Hodge, Ethnologist-in-Charge, from Handbook of American Indians North of Mexico, published as Bulletin 30, Bureau of American

Ethnology. Reprinted under the direction of James White, F. R. G. S., Secretary, Commission of Conservation, Ottawa, 1913).

HRDLICKA, A.
1908.   Physiological and Medical Observations among the Indians of the Southwestern United States and Northern Mexico (Bulletin 34, Bureau of American Ethnology, Washington, 1908).
1931.   Fecundity in the Sioux Women (American Journal of Physical Anthropology, vol. 16, pp. 81–90, Philadelphia, 1931).

KROGMAN, W. M.
1935.   Vital Data on the Population of the Seminole Indians of Florida and Oklahoma (Human Biology, vol. 7, pp. 335–349, Baltimore, 1935).

LAWRENCE, A. G.
1875.   Special Report of General A. G. Lawrence of the Commission [appointed to treat with the Sioux Indians for the Relinquishment of the Black Hills], on the Probable Increase of Population among the Sioux Indians (Annual Report, Commissioner of Indian Affairs, to the Secretary of the Interior for the Year 1875, Washington, 1875).

LORIMER, FRANK AND OSBORN, FREDERICK.
1934.   Dynamics of Population. Social and Biological Significance of Changing Birth Rates in the United States. New York, 1934.

MERIAM, LEWIS [AND OTHERS]
1928.   The Problem of Indian Administration. Report of a Survey made at the Request of Honorable Hubert Work, Secretary of the Interior, and submitted to him February 21, 1928 (Institute for Government Research, Studies in Administration, Baltimore, 1928).

MOONEY, JAMES
1928.   The Aboriginal Population of America North of Mexico (Smithsonian Miscellaneous Collections, vol. 80, pp. 1–40, Washington, 1928).

MORSE, JEDIDIAH
1822.   A Report to the Secretary of War of the United States, on Indian Affairs, comprising a Narrative of a Tour performed in the Summer of 1820. New Haven, 1822.

STEGGARDA, MORRIS
1935.   Some Eugenical Aspects of the Indians of Piste, Yucatan (Science, vol. 82, p. 616, December 27, 1935).

THOMPSON, DAVID
1916.   David Thompson's Narrative of his Explorations in Western America, 1784–1812. Edited by J. B. Tyrrell. The Champlain Society. Toronto, 1916.

VAUGHAN, ALFRED J.
1858.   Report of Alfred J. Vaughan, agent for the Blackfeet Indians (Report of the Commissioner of Indian Affairs, accompany-

ing the Annual Report of the Secretary of the Interior for the
year 1858, pp. 76–83, Washington, 1858).

WISSLER, CLARK
   1936a.   The Excess of Females among the Cree Indians (Proceedings,
          National Academy of Sciences, vol. 22, pp. 151–153, 1936).
   1936b.   Population Changes among the Northern Plains Indians (Yale
          University Publications in Anthropology, No. 1, pp. 1–20,
          New Haven, 1936).
   1936c.   The Effect of Civilization upon the Length of Life of the American
          Indian (Scientific Monthly, vol. 43, pp. 5–13, 1936).
   1936d.   Distribution of Deaths among American Indians (Human Biology,
          vol. 8, pp. 223–231, Baltimore, 1936).